Task 1: Complete by 10/16/2007

Task Purpose: Familiarization with the microcontroller board

Obtain a locker in the ELC from Natalie. You should get one appropriate to the physical size of your project (if indeed that is possible. Obtain a Senior Design kit from Dr. Schafer.

Using the kit do the following steps:

1. Verify that the power jumper on your board is connected between Vdd and 5.0. The power jumper is JP9 and is located directly below the LED's on the board.

2. There are two power bricks in the kit. One is a fixed voltage, and is used for the programmer. It should say "Prog" on it somewhere. The other is a variable voltage supply. **These power supplies are cheap and unregulated. The voltage on the slide switch will not be the actual voltage it puts out.** For the board to work correctly, your want around 7 volts from the power brick. Use the meter included in your kit to adjust the slide switch to give you that voltage.

3. Connect the power supply to the microcontroller board. Verify that the LEDs above JP9 are both shining brightly.

4. Unplug the power from the microcontroller controller board, and connect the LCD display using the supplied cable. The cable should connect in the obvious way so that with the LCD display sitting to the right of the microcontroller board, with the cable is not twisted.

5. Reapply the power, and verify that the LCD initially displays a message. The 18F4620 has a test program in it already. It should display some stuff on the LCD screen, count up and down the lights on the LED bar (note that the top two LED segments are always on when power is applied), display some more stuff on the LCD, and then go into a terminal echo program. This part of the test program will echo characters back to HyperTerminal, and also display the characters typed on the terminal on the LCD screen.

6. Connect the serial cable between the microcontroller board and the PC. Run HyperTerminal on the PC, with HyperTerminal setup for a baud rate of 57600, 8 bit data, one stop bit, and no flow control. Type in the HyperTerminal window, and verify that you can see the characters appear on the screen in HyperTerminal and also on the LCD display.

7. As you are typing in HyperTerminal, you will notice that the characters stop appearing in the LCD display and then begin appearing again in the other line of the display. How many characters does the LCD controller think are on one line of the display? What happens to the display of characters in the HyperTerminal screen if the serial cable is unplugged? Explain why this might happen and why it is very useful.

R. M Schafer

Task Report Contents:

In a brief write-up, give the answers to the questions in part 7, and also describe any difficulties you had performing the task.